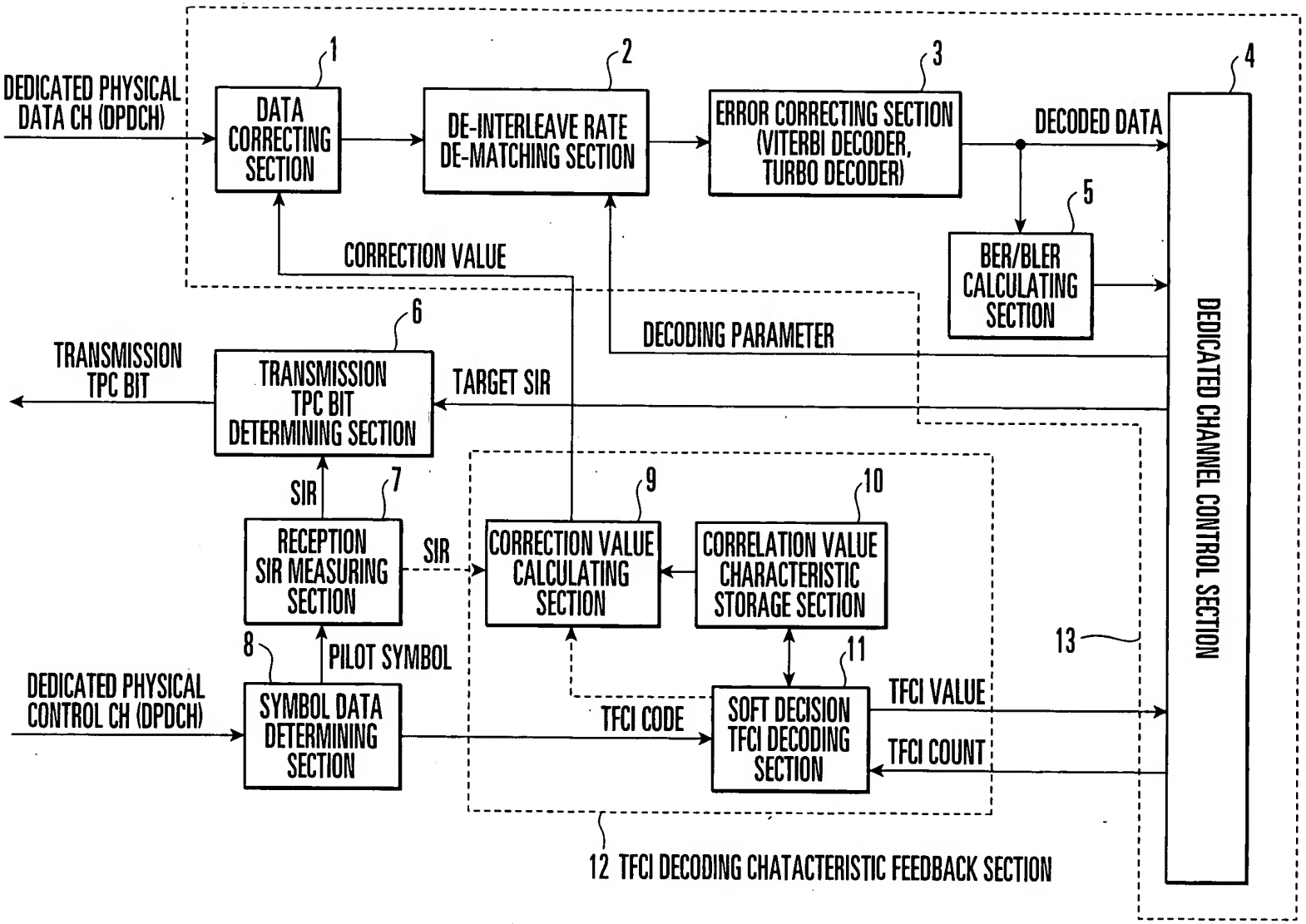

DEDICATED PHYSICAL DATA CH (DPDCH)
1
DATA CORRECTING SECTION
2
DE-INTERLEAVE RATE DE-MATCHING SECTION
3
ERROR CORRECTING SECTION (VITERBI DECODER, TURBO DECODER)
DECODED DATA
4
DEDICATED CHANNEL CONTROL SECTION
5
BER/BLER CALCULATING SECTION
CORRECTION VALUE
DECODING PARAMETER
6
TRANSMISSION TPC BIT
TRANSMISSION TPC BIT DETERMINING SECTION
TARGET SIR
SIR
7
RECEPTION SIR MEASURING SECTION
SIR
9
CORRECTION VALUE CALCULATING SECTION
10
CORRELATION VALUE CHARACTERISTIC STORAGE SECTION
13
8
PILOT SYMBOL
11
DEDICATED PHYSICAL CONTROL CH (DPDCH)
SYMBOL DATA DETERMINING SECTION
TFCI CODE
SOFT DECISION TFCI DECODING SECTION
TFCI VALUE
TFCI COUNT
12 TFCI DECODING CHATACTERISTIC FEEDBACK SECTION

FIG. 1

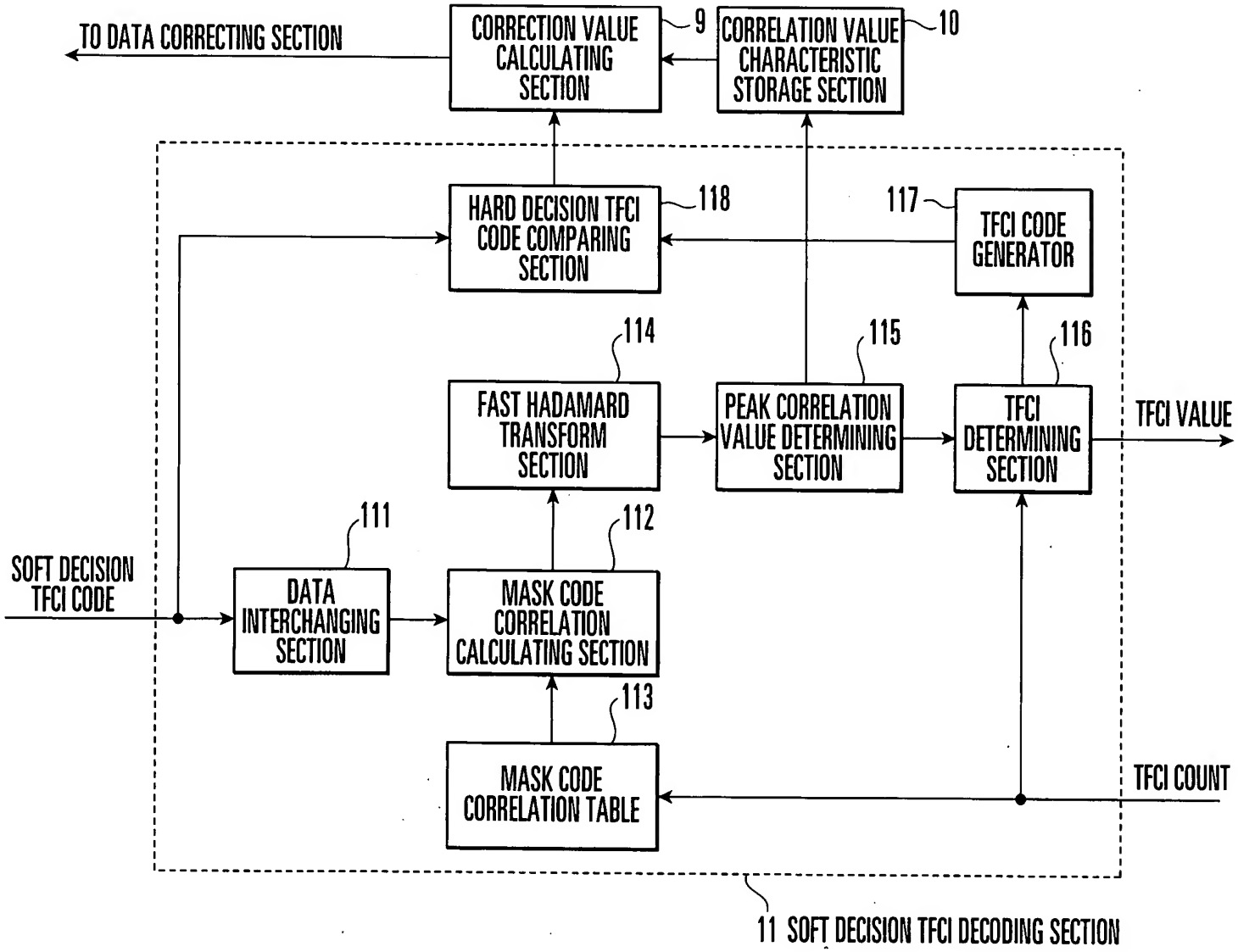

TO DATA CORRECTING SECTION
CORRECTION VALUE CALCULATING SECTION
9
CORRELATION VALUE CHARACTERISTIC STORAGE SECTION
10
HARD DECISION TFCI CODE COMPARING SECTION
118
117
TFCI CODE GENERATOR
114
115
116
FAST HADAMARD TRANSFORM SECTION
PEAK CORRELATION VALUE DETERMINING SECTION
TFCI DETERMINING SECTION
TFCI VALUE
111
112
SOFT DECISION TFCI CODE
DATA INTERCHANGING SECTION
MASK CODE CORRELATION CALCULATING SECTION
113
MASK CODE CORRELATION TABLE
TFCI COUNT
11 SOFT DECISION TFCI DECODING SECTION

FIG. 2

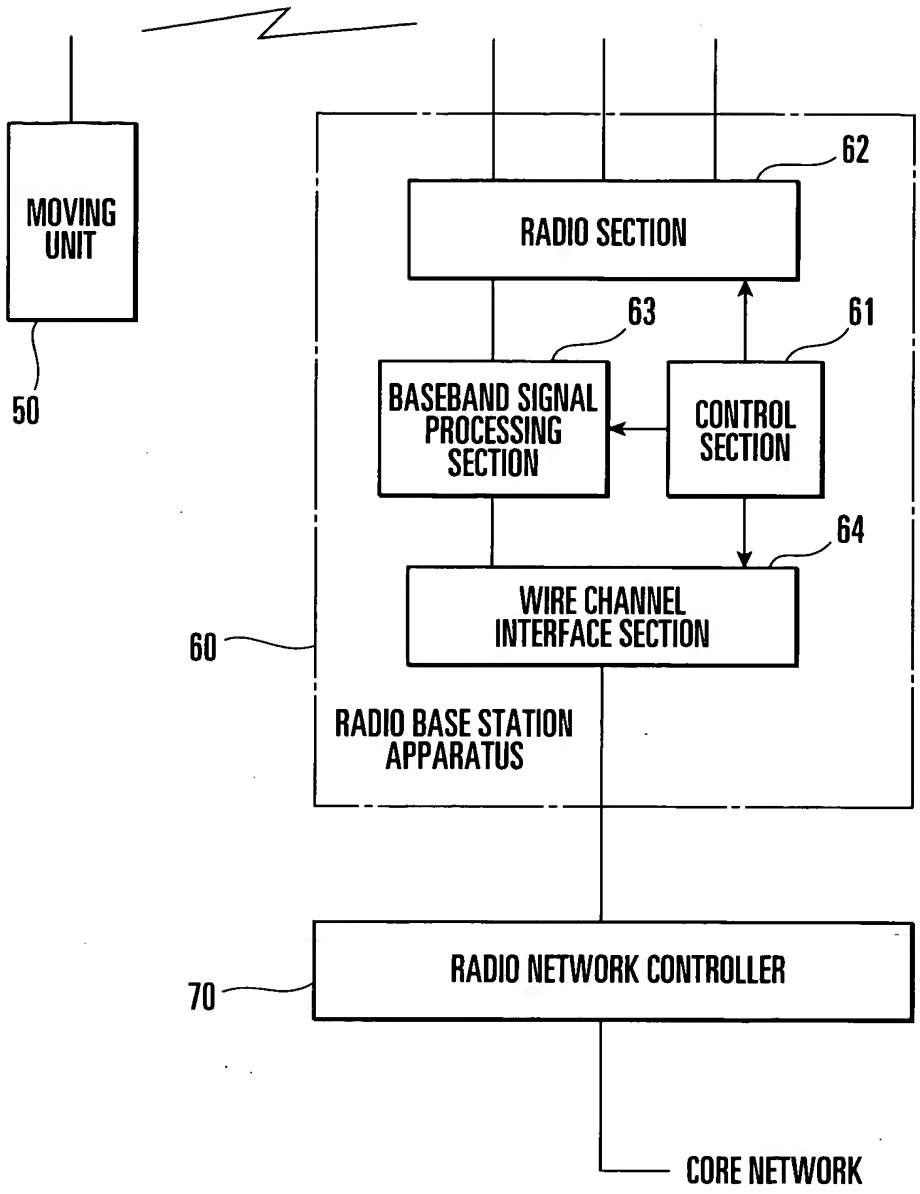

MOVING UNIT
50
62
RADIO SECTION
63
61
BASEBAND SIGNAL PROCESSING SECTION
CONTROL SECTION
64
WIRE CHANNEL INTERFACE SECTION
60
RADIO BASE STATION APPARATUS
RADIO NETWORK CONTROLLER
70
CORE NETWORK

FIG. 3

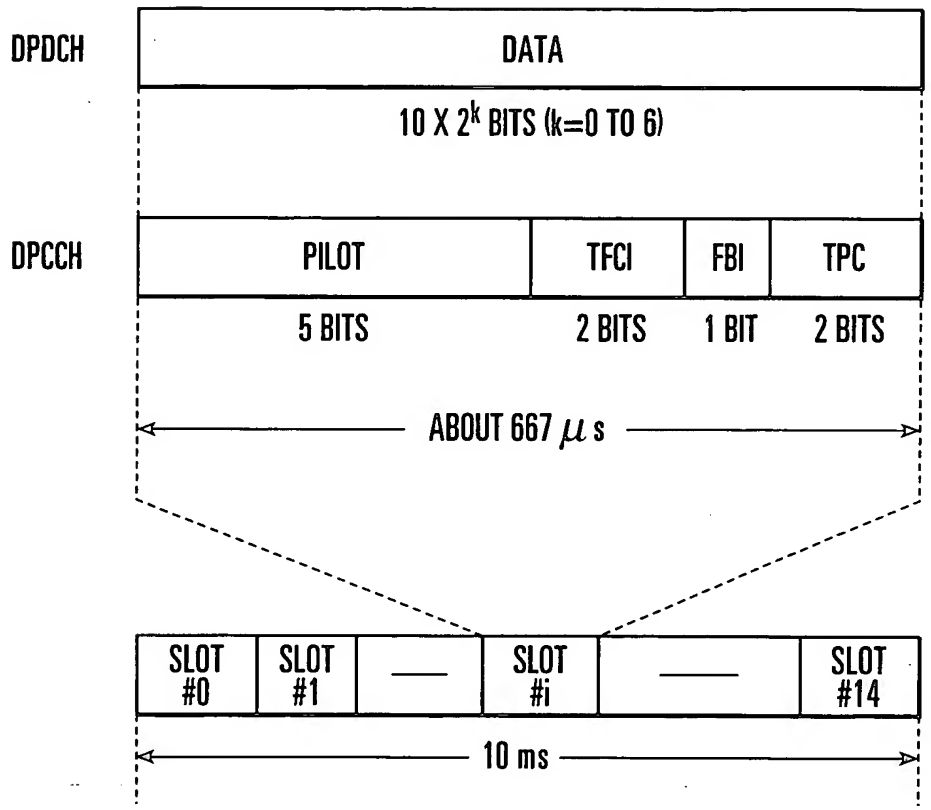

DPDCH
DATA
10 X 2^k BITS (k=0 TO 6)
DPCCH
PILOT
TFCI
FBI
TPC
5 BITS
2 BITS
1 BIT
2 BITS
ABOUT 667 μs
SLOT #0
SLOT #1
SLOT #i
SLOT #14
10 ms

FIG. 4

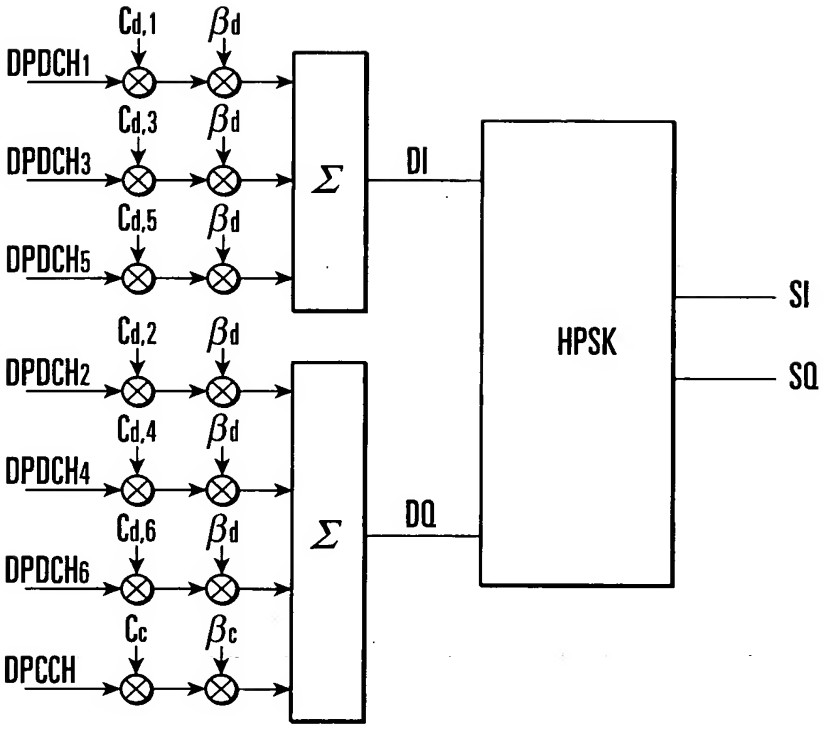

Cd,1
βd
DPDCH1
Cd,3
βd
DPDCH3
Cd,5
βd
DPDCH5
Σ
DI
Cd,2
βd
DPDCH2
Cd,4
βd
DPDCH4
Cd,6
βd
DPDCH6
Cc
βc
DPCCH
Σ
DQ
HPSK
SI
SQ

FIG. 5

BASIS SEQUENCES FOR (32,10) TFCI CODE

1	M_{10}	M_{11}	M_{12}	M_{13}	M_{14}	M_{15}	M_{16}	M_{17}	M_{18}	M_{19}
0	1	0	0	0	0	1	0	0	0	0
1	0	1	0	0	0	1	1	0	0	0
2	1	1	0	0	0	1	0	0	0	1
3	0	0	1	0	0	1	1	0	1	1
4	1	0	1	0	0	1	0	0	0	1
5	0	1	1	0	0	1	0	0	1	0
6	1	1	1	0	0	1	0	1	0	0
7	0	0	0	1	0	1	0	1	1	0
8	1	0	0	1	0	1	1	1	1	0
9	0	1	0	1	0	1	1	0	1	1
10	1	1	0	1	0	1	0	0	1	1
11	0	0	1	1	0	1	0	1	1	0
12	1	0	1	1	0	1	0	1	0	1
13	0	1	1	1	0	1	1	0	0	1
14	1	1	1	1	0	1	1	1	1	1
15	1	0	0	0	1	1	1	1	0	0
16	0	1	0	0	1	1	1	1	0	1
17	1	1	0	0	1	1	1	0	1	0
18	0	0	1	0	1	1	0	1	1	1
19	1	0	1	0	1	1	0	1	0	1
20	0	1	1	0	1	1	0	0	1	1
21	1	1	1	0	1	1	0	1	1	1
22	0	0	0	1	1	1	0	1	0	0
23	1	0	0	1	1	1	1	1	0	1
24	0	1	0	1	1	1	1	0	1	0
25	1	1	0	1	1	1	1	0	0	1
26	0	0	1	1	1	1	0	0	1	0
27	1	0	1	1	1	1	1	1	0	0
28	0	1	1	1	1	1	1	1	1	0
29	1	1	1	1	1	1	1	1	1	1
30	0	0	0	0	0	1	0	0	0	0
31	0	0	0	0	1	1	1	0	0	0

COMBINATION IS QUADRATURE VECTOR OR ROW VECTOR OF WALSH MATRIX

MASK CODE

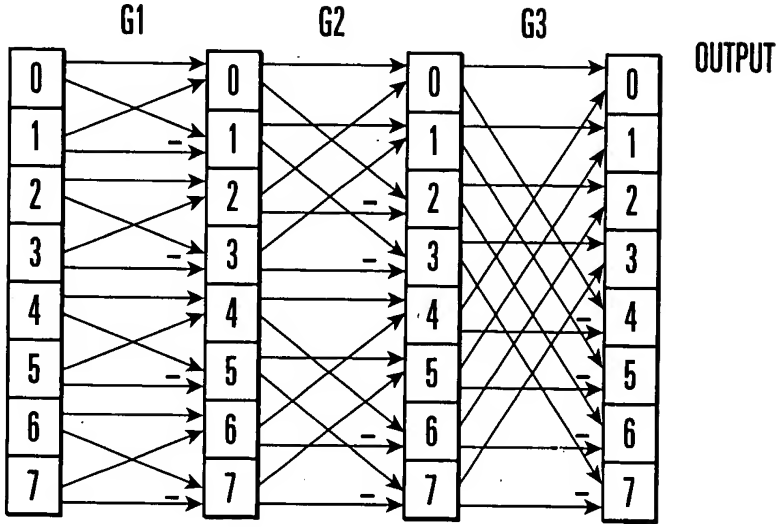
FIG. 6

WALSH MATRIX

$$\begin{bmatrix} 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 \\ 1 & 1 & -1 & -1 & 1 & 1 & -1 & -1 \\ 1 & -1 & -1 & 1 & 1 & -1 & -1 & 1 \\ 1 & 1 & 1 & 1 & -1 & -1 & -1 & -1 \\ 1 & -1 & 1 & -1 & -1 & 1 & -1 & 1 \\ 1 & 1 & -1 & -1 & -1 & -1 & 1 & 1 \\ 1 & -1 & -1 & 1 & -1 & 1 & 1 & -1 \end{bmatrix} = \begin{bmatrix} \boxed{1} & \boxed{1} & 0 & 0 & 0 & 0 & 0 & 0 \\ \boxed{1} & \boxed{-1} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 \end{bmatrix} \bullet \begin{bmatrix} \boxed{1} & 0 & \boxed{1} & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 & 0 & 0 & 0 & 0 \\ \boxed{1} & 0 & \boxed{-1} & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 & 1 & 0 & -1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & -1 \end{bmatrix} \bullet \begin{bmatrix} \boxed{1} & 0 & 0 & 0 & \boxed{1} & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 1 \\ \boxed{1} & 0 & 0 & 0 & \boxed{-1} & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & -1 \end{bmatrix}$$

H G1 G2 G3

□ IS BUTTERFLY COMPUTATION ARRANGEMENT



$$H_8 = \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix} \otimes H_4$$

WHERE ⊗ IS KRONECKER PRODUCT. IN GENERAL,

$$H_k = \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix} \otimes H_{k12}$$

kTH-ORDER WALSH MATRIX CAN BE GENERATED BY

FIG. 7

FIG.8A

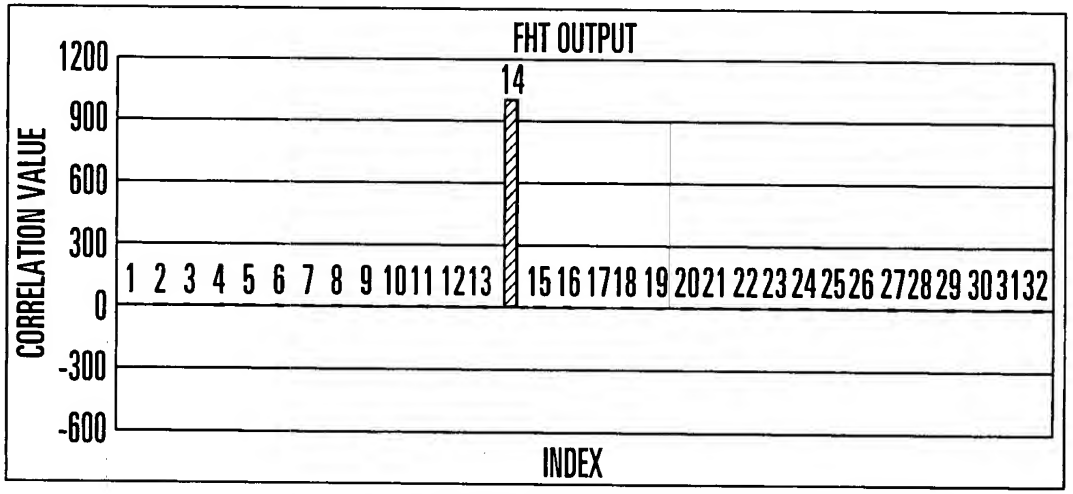
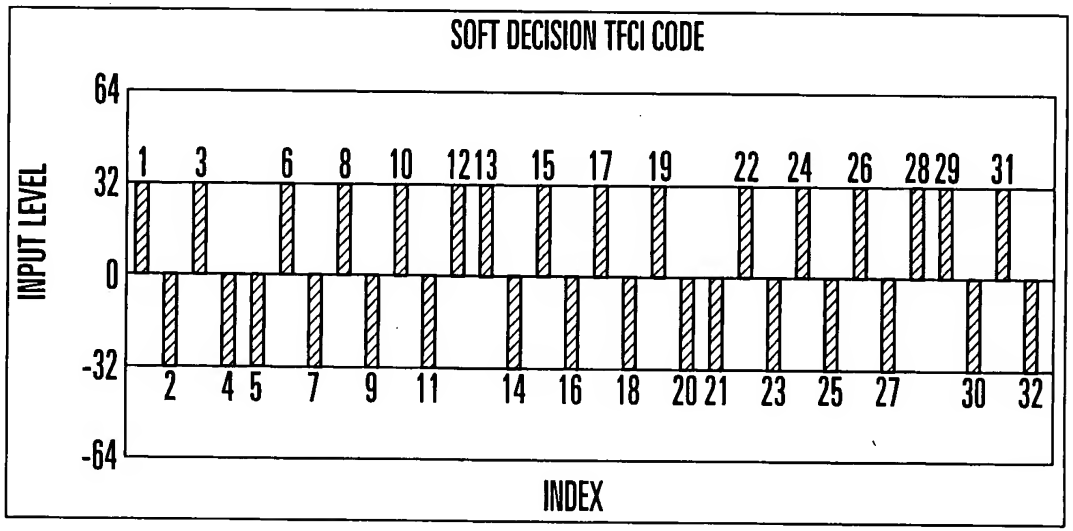


FIG.8B



REFERENCE VALUE INPUT LEVEL : 32 NOISE LEVEL : ±0

FIG.9A

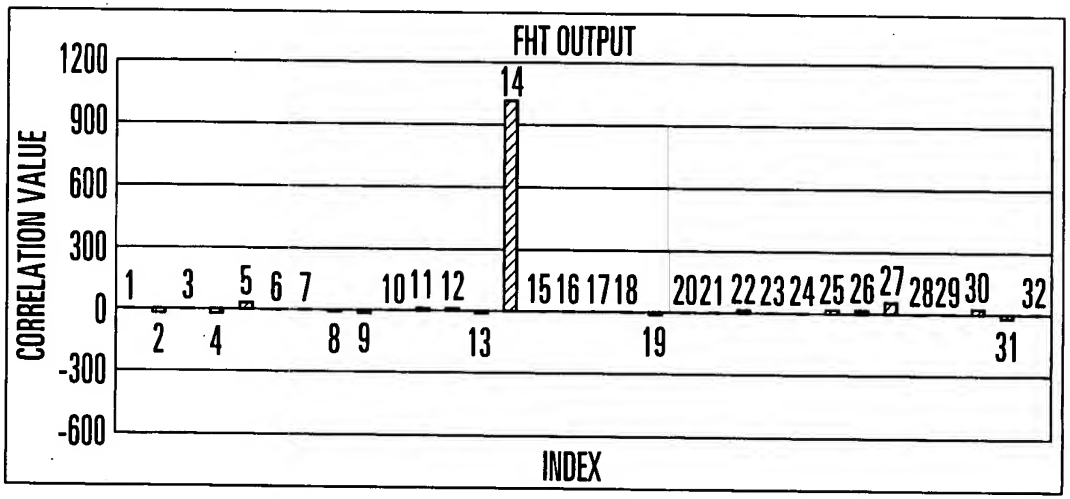
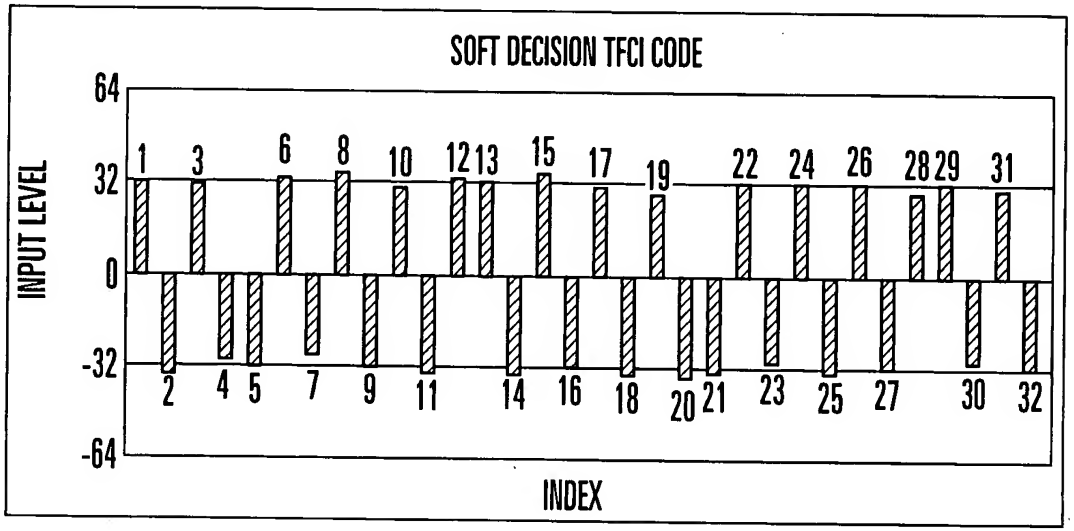


FIG.9B



REFERENCE VALUE INPUT LEVEL : 32 NOISE LEVEL : ±4

FIG.10A

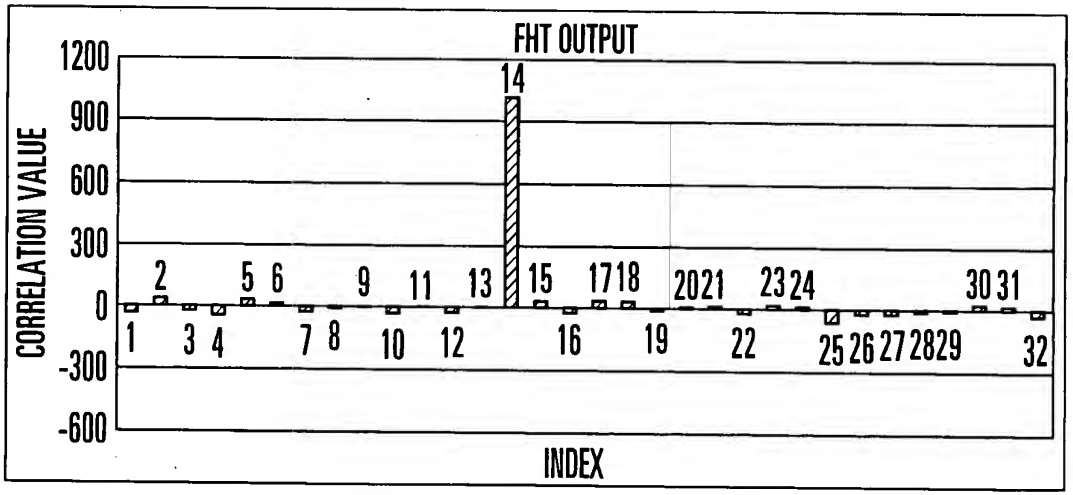
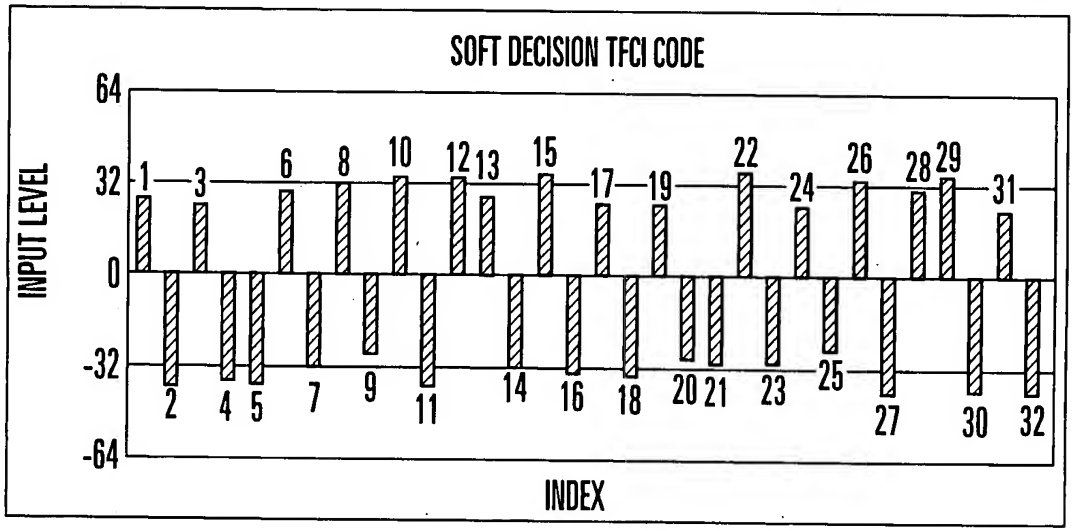


FIG.10B



REFERENCE VALUE INPUT LEVEL : 32 NOISE LEVEL : ±8

FIG.11A

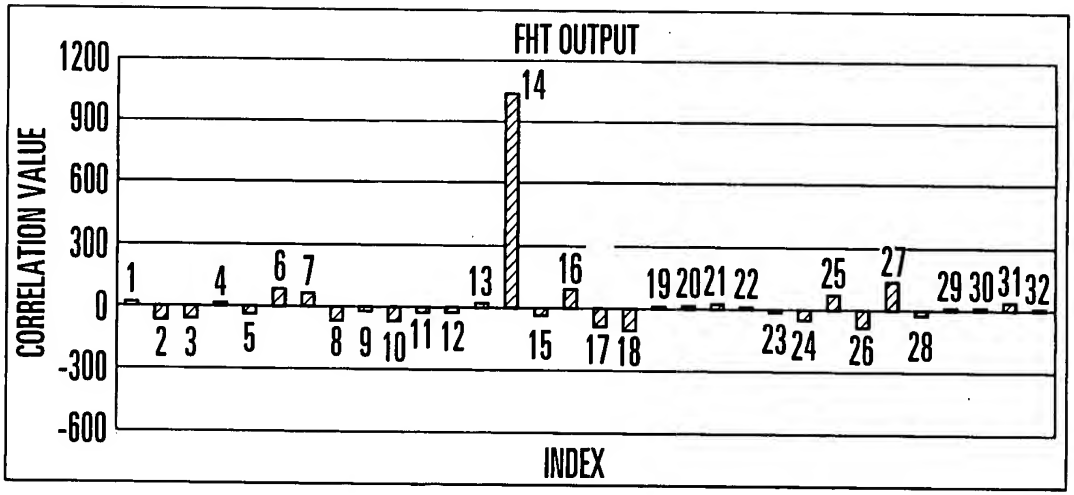
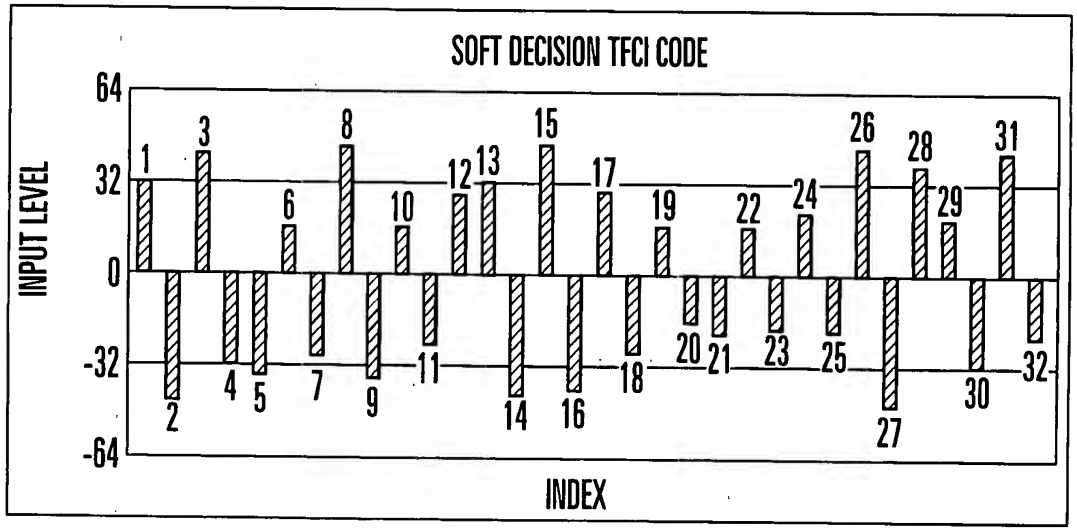


FIG.11B



REFERENCE VALUE INPUT LEVEL : 32 NOISE LEVEL : ±16

FIG.12A

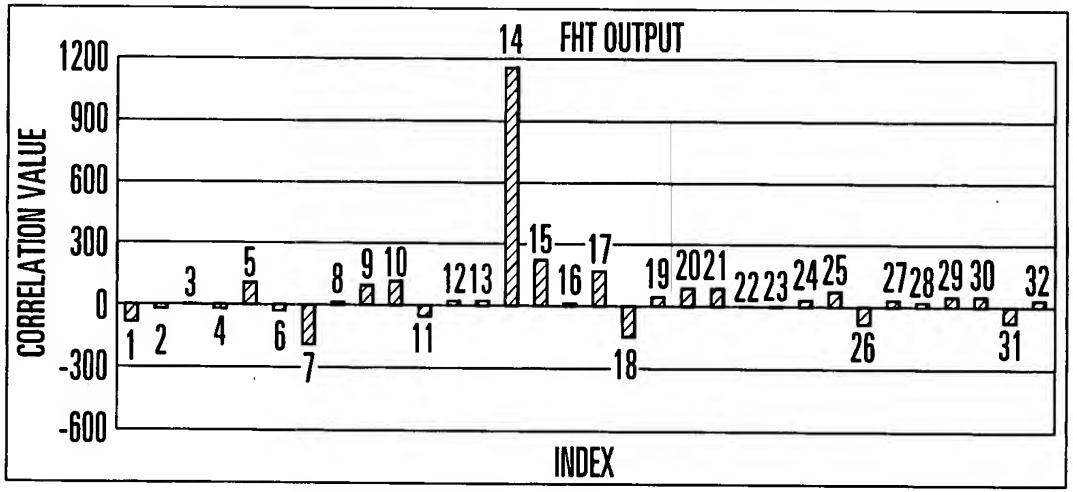
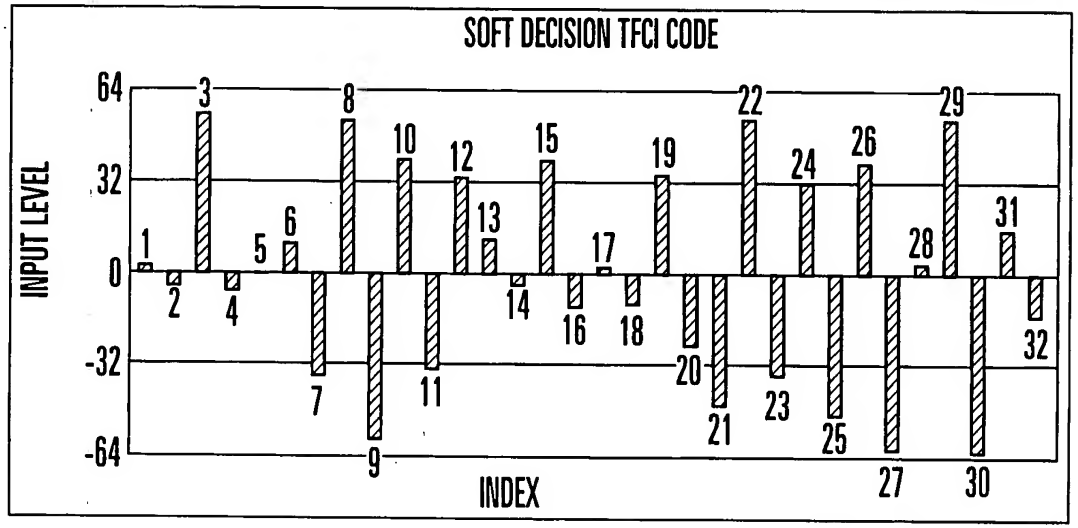


FIG.12B



REFERENCE VALUE INPUT LEVEL : 32 NOISE LEVEL : ±32

FIG.13A

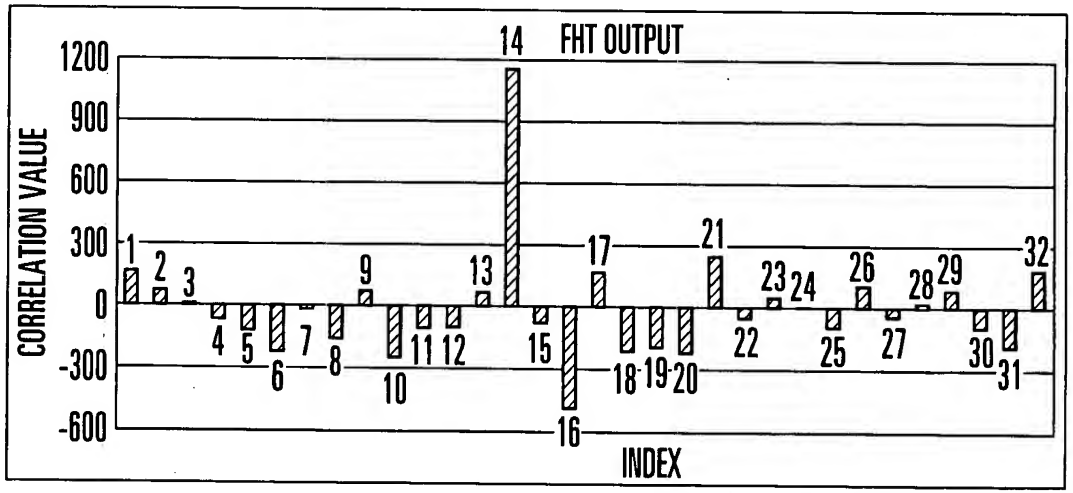
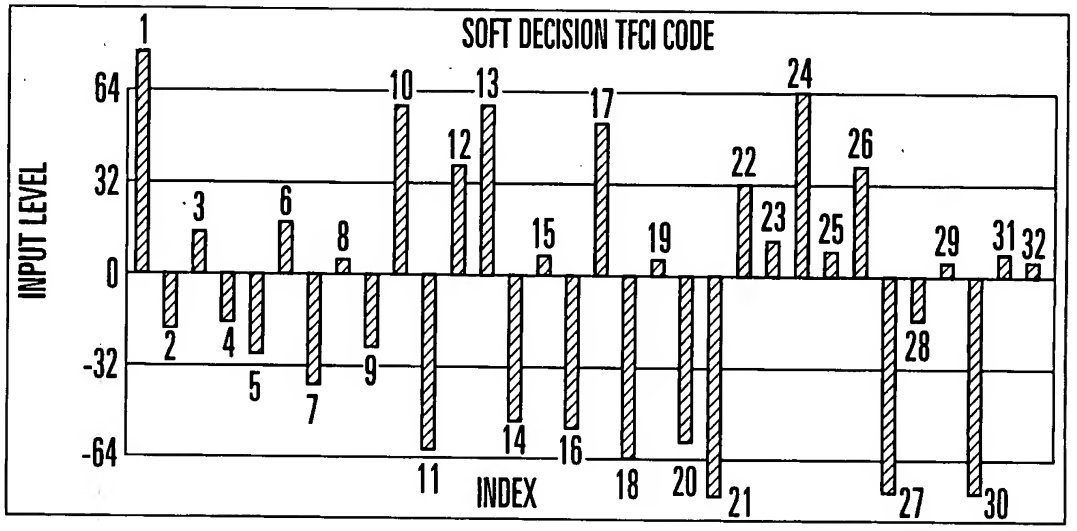


FIG.13B



REFERENCE VALUE INPUT LEVEL : 32 NOISE LEVEL : ±48

FIG.14A

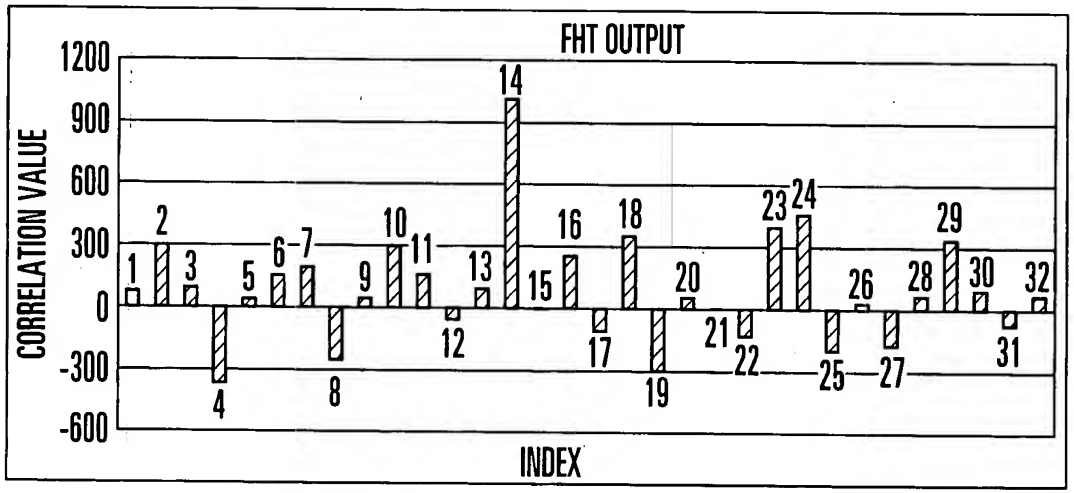
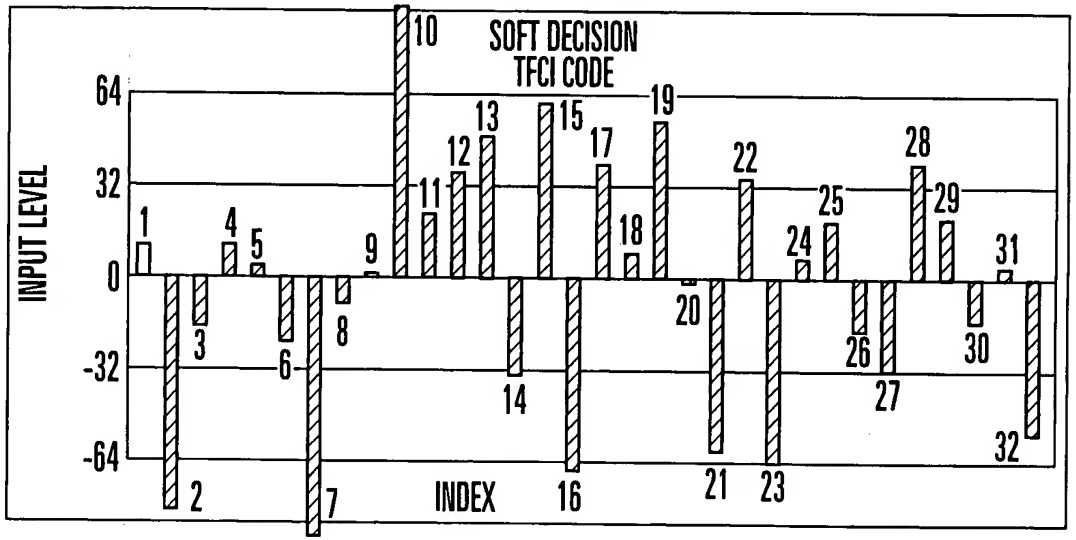


FIG.14B



REFERENCE VALUE INPUT LEVEL : 32 NOISE LEVEL : ±64

FIG. 15A

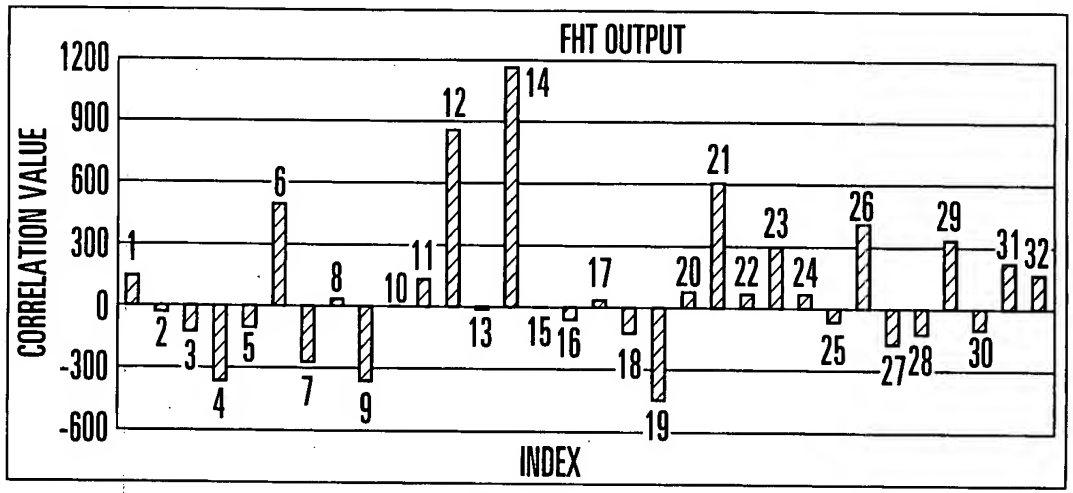


FIG. 15B

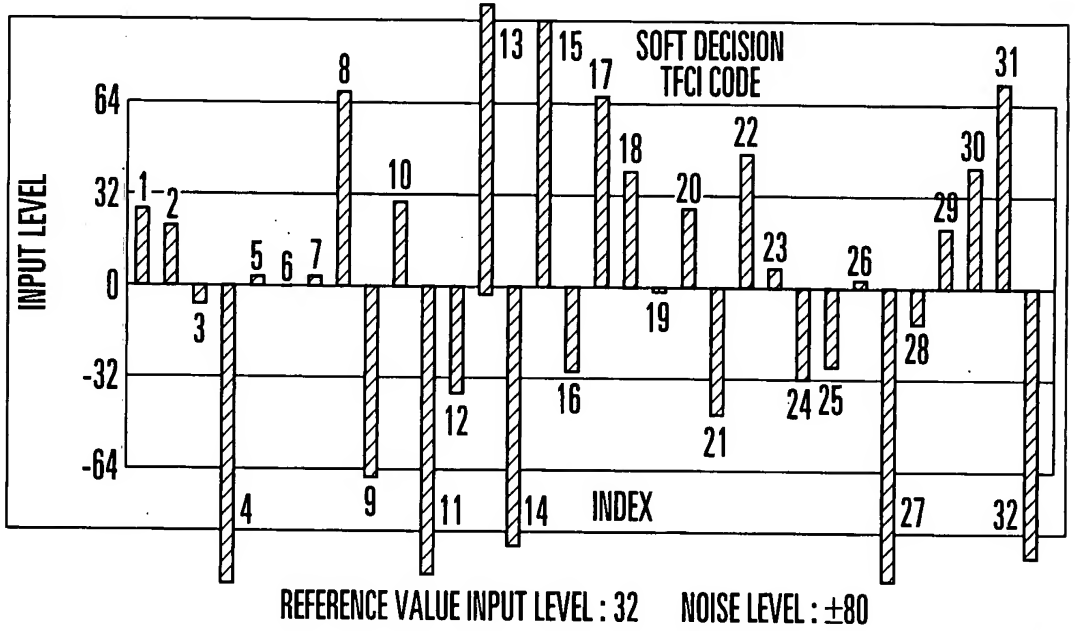


FIG.16A

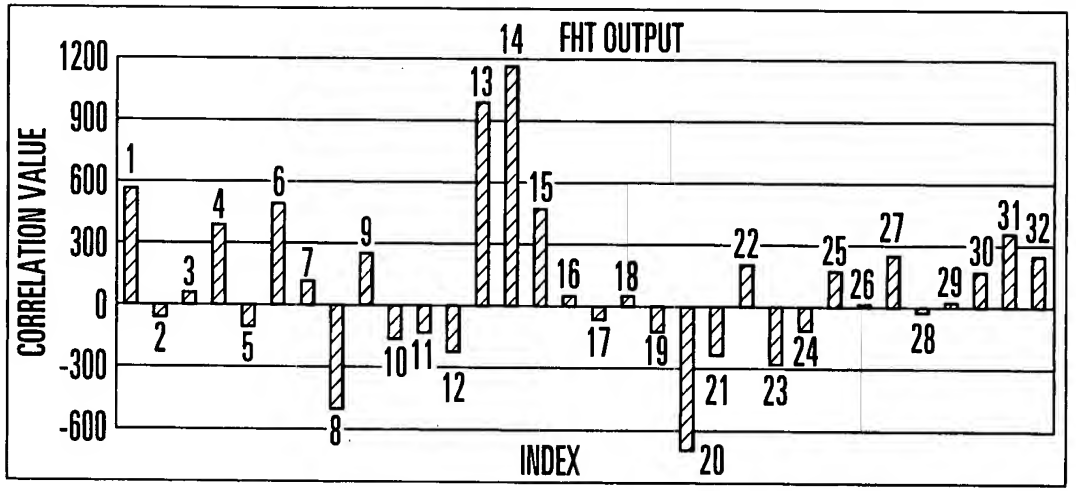
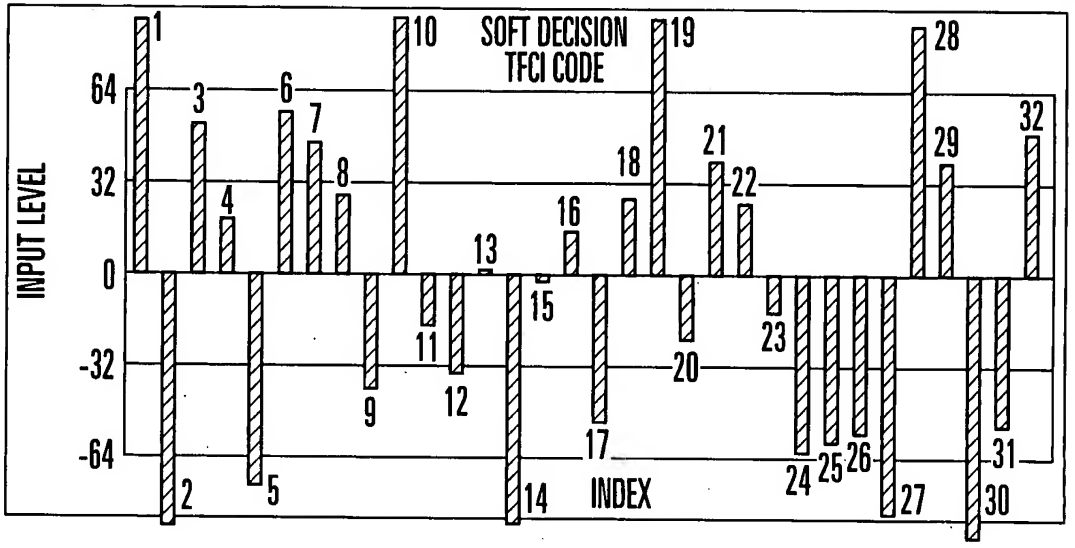


FIG.16B



REFERENCE VALUE INPUT LEVEL : 32 NOISE LEVEL : ±96

FIG.17A

FIG.17B

FIG.17C